

Fig. 1

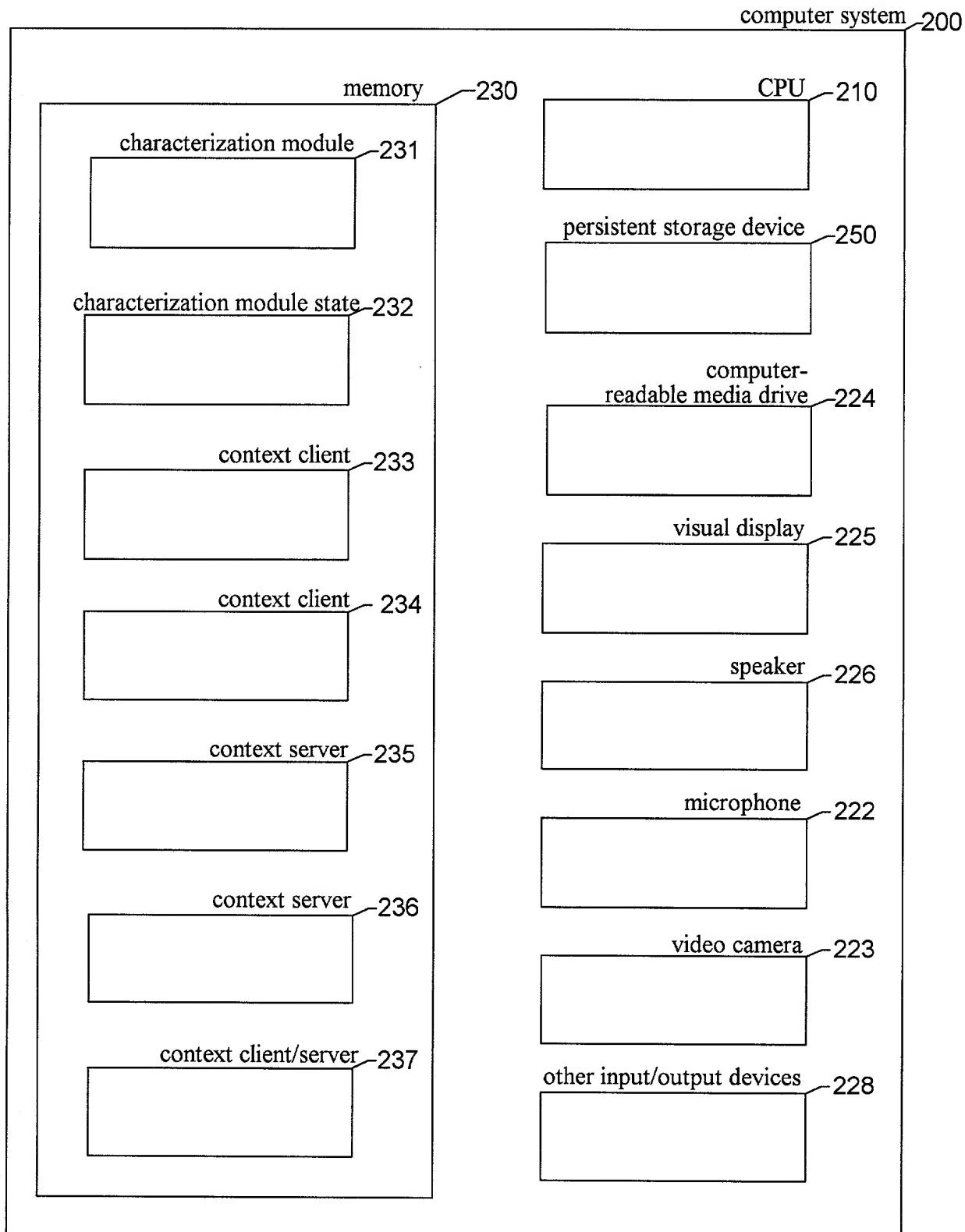
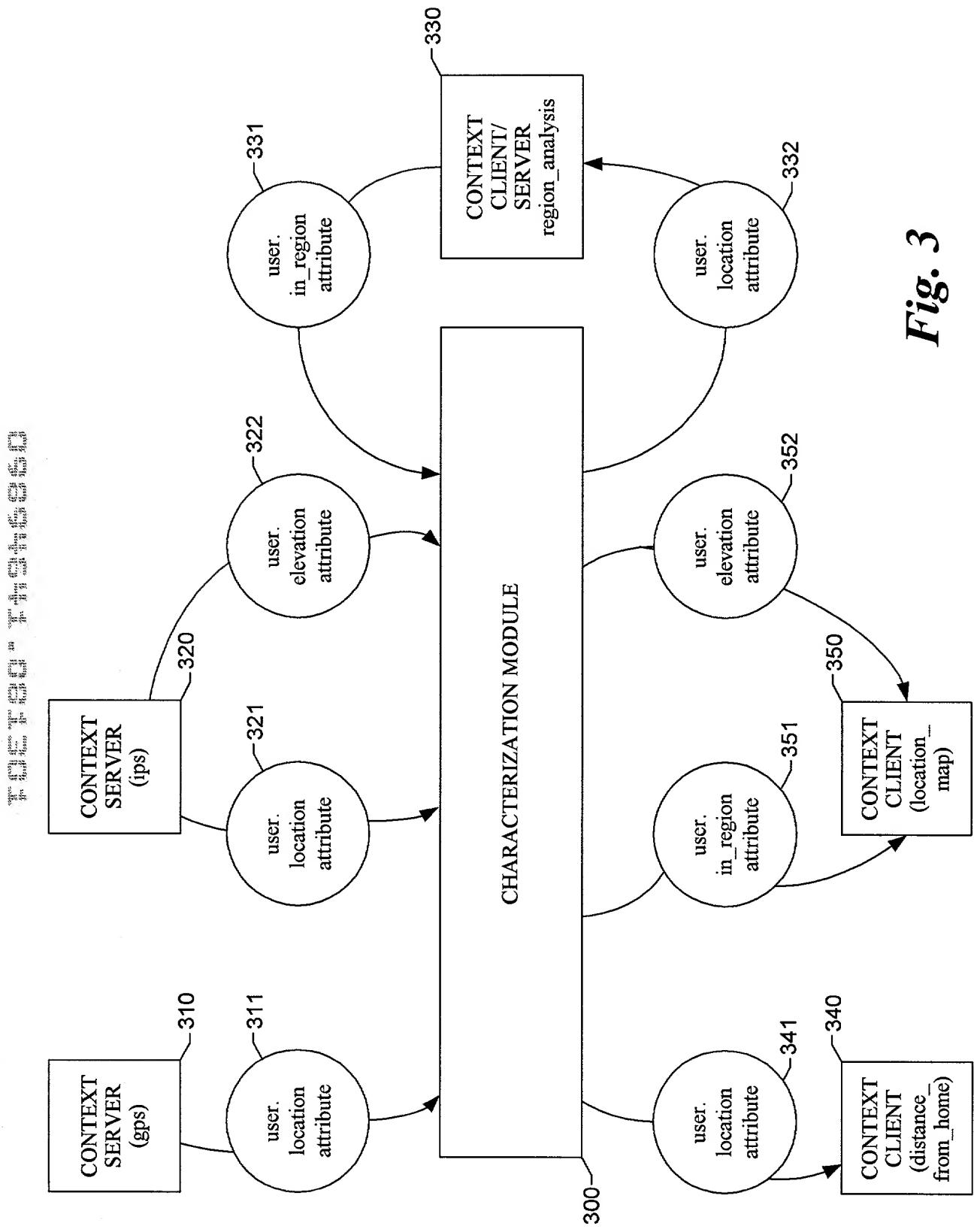


Fig. 2

Fig. 3



context server table				
context server name	version	installation date	filename	request handler
401 gps	1	2/10/2000	gps.exe	(reference)
402 ips	1	2/21/2000	ips.exe	(reference)
403 location_region_analysis	1	2/10/2000	l_r_a.exe	(reference)

Fig. 4

attribute instance table				
attribute name	context server name	value	uncertainty	timestamp
501 user.location	gps	47° 38' 73" N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000
502 user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000
503 user.elevation	ips	22	.5	13:11:01.118 2/22/2000
504 user.in_region	location_region_analysis	none	none	meters

Fig. 5

600	context client name		message handler
601	location_map	(reference)	
602	distance_from_home	(reference)	
603	region_analysis	(reference)	
		611	612

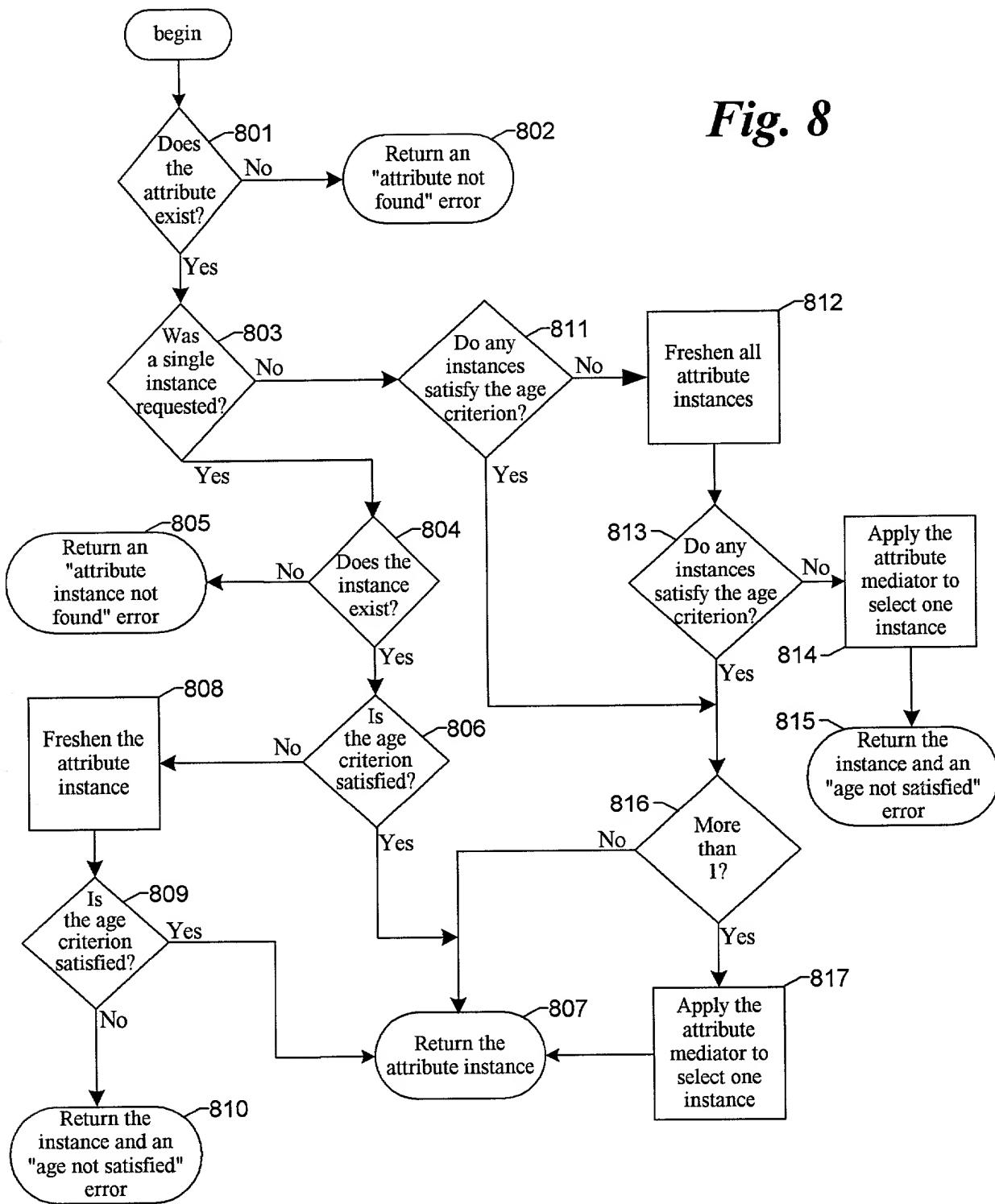
Fig. 6

attribute instance table					
attribute name	context server name	value	uncertainty	timestamp	units
user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes
user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes
user.elevation	ips	22	.5	13:11:01.118 2/22/2000	meters
user.in_region	location_region_analysis	none	none	none	none
		711	712	713	714
				715	716
					717

Fig. 7

Fig. 8

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attribute instance table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22.25	.5	13:11:06.565 2/22/2000	meters	1
user.in_region	region_analysis	none	none	none	none	1

```

graph TD
    900[900] --> 901[901]
    900 --> 902[902]
    900 --> 903[903]
    900 --> 904[904]
    901 --> 911[911]
    901 --> 912[912]
    901 --> 913[913]
    901 --> 914[914]
    902 --> 915[915]
    902 --> 916[916]
    902 --> 917[917]
    903 --> 918[918]
    903 --> 919[919]
    903 --> 920[920]
    904 --> 921[921]
    904 --> 922[922]
    904 --> 923[923]
  
```

Fig. 9

condition table

condition name	context client name	first logical parameter	second logical parameter	comparison value	logical operator
in_region_true	region_analysis	user.in_region	none	TRUE	=
1001	1011	1012	1013	1014	1015
1000	1001	1002	1003	1004	1016

```

graph TD
    1000[1000] --> 1001[1001]
    1000 --> 1002[1002]
    1000 --> 1003[1003]
    1000 --> 1004[1004]
    1001 --> 1011[1011]
    1001 --> 1012[1012]
    1001 --> 1013[1013]
    1001 --> 1014[1014]
    1002 --> 1015[1015]
    1002 --> 1016[1016]
    1002 --> 1017[1017]
    1003 --> 1018[1018]
    1003 --> 1019[1019]
    1003 --> 1020[1020]
    1004 --> 1021[1021]
    1004 --> 1022[1022]
    1004 --> 1023[1023]
  
```

Fig. 10

condition monitor table					
condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated
region_boundary_crossed	region_analysis	in_region_true	TRUE or FALSE	30	13:11:29 101 2/22/2000
1101	1111	1112	1113	1114	1115

```

graph TD
    1100[1100] --> 1111[1111]
    1100 --> 1112[1112]
    1111 --> 1113[1113]
    1112 --> 1114[1114]
    1114 --> 1115[1115]
    1114 --> 1116[1116]
    1114 --> 1117[1117]
    1114 --> 1118[1118]
  
```

Fig. 11

condition monitor table					
condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated
region_boundary_crossed	region_analysis	in_region_true	TRUE or FALSE	30	13:11:59 101 2/22/2000
1201	1211	1212	1213	1214	1215

```

graph TD
    1200[1200] --> 1211[1211]
    1200 --> 1212[1212]
    1211 --> 1212[1212]
    1212 --> 1213[1213]
    1213 --> 1214[1214]
    1213 --> 1215[1215]
    1213 --> 1216[1216]
    1213 --> 1217[1217]
    1213 --> 1218[1218]
  
```

Fig. 12

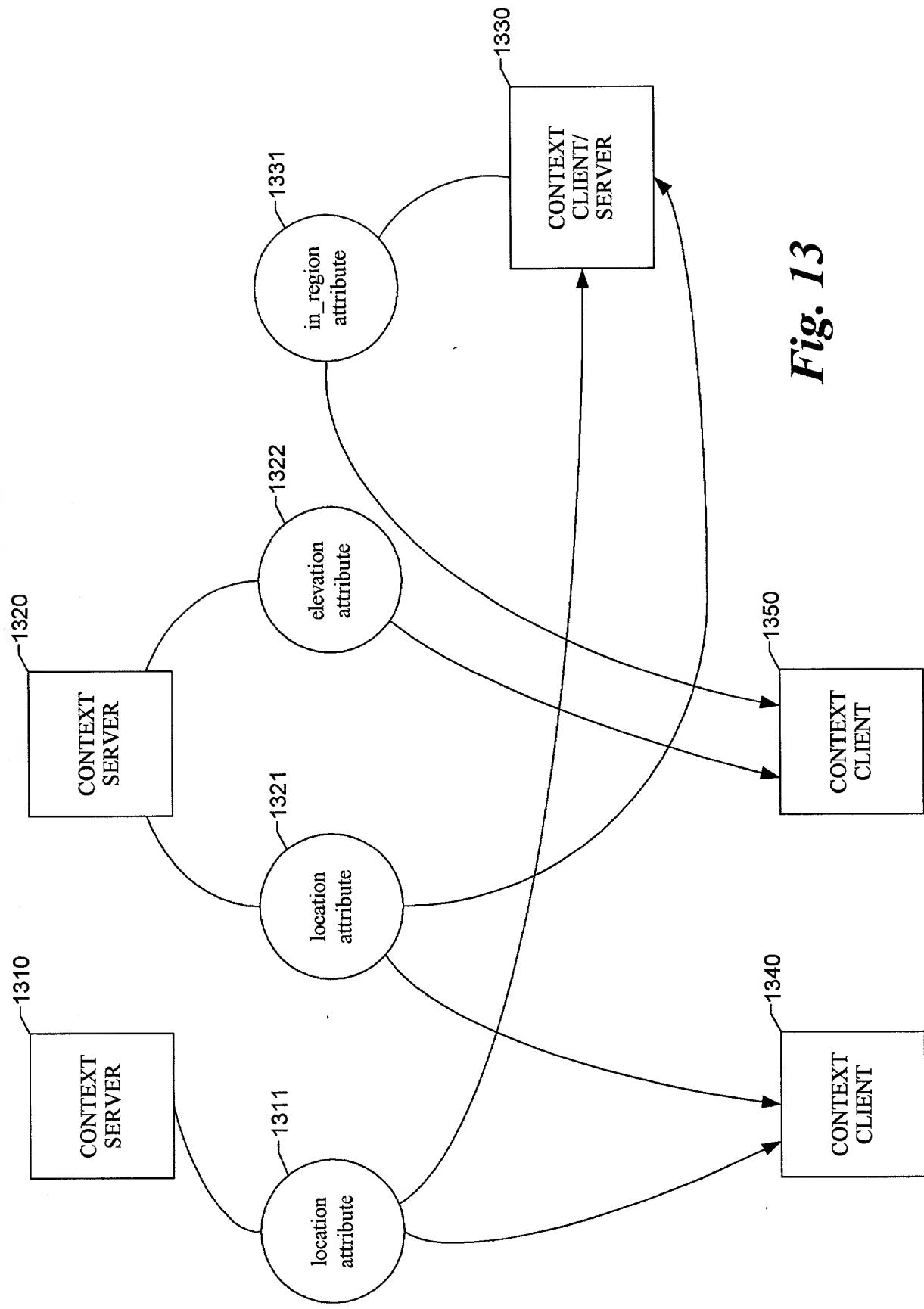


Fig. 13

attribute request table		
	attribute name	context client name
1401	user.location	distance_from_home
1402	user.in_region	location_map
1403	user.location [gps]	location_region_analysis
1404	user.elevation	location_map

1411 1412

Fig. 14

User.	Platform. (continued)
Desired_privacy_level	CPU.
Interruptibility	Load
Speed	Speed
Direction	Memory.
Acceleration	Total_capacity
Availability.	Used
Cognitive_availability	Storage.
Tactile_availability	Total_capacity
Manual_availability	Used
Visual_availability	Connectivity.
Oral_availability	Connection_status
Auditory_availability	Connection_speed
Proximity.<Item or place name>	Connection_type/device
Mood.	Connection_activity
Happiness	Power.
Sadness	Power_source
Anger	Power_level
Frustration	Environment.
Confusion	People.
Activity.	Nearest
Driving	Number_present
Eating	Number_close
Running	Local.
Sleeping	Time
Talking	Date
Typing	Temperature
Walking	Pressure
Location.	Wind_speed
Place_name	Wind_direction
Latitude	Absolute_humidity
Longitude	High_forecast_temperature
Altitude	Low_forecast_temperature
Room	People_present
Floor	Ambient_noise_level
Building	Ambient_light_level
Address	Days.<previous or future>.
Street	High_temperature
City	Low_temperature
County	Precipitation_type
State	Precipitation_amount
Country	Place.<place name>. (same as Environment.Local)
Postal_Code	
Destination. (same as User.Location.)	
Physiology.	Application.
Pulse	Mail.
Body_temperature	Available
Blood_pressure	New_messages_waiting
Respiration	Messages_waiting_to_be_sent
Person.<name or ID>. (same as User.)	Phone.
Platform.	Available
UI.	In_use
Oral_input_device_availability	On/off
Manual_input_device_availability	Notification_mechanism
Tactile_output_device_availability	Call_incoming
Visual_output_device_availability	Caller_ID
Auditory_output_device_availability	Sound_recorder.
	Available
	Recording

Fig. 15

Fig. 16

- 1) User Setting
 - a) Mental Context
 - i) Meaning
 - ii) Cognition
 - (1) Divided User Attention
 - (2) Task Switching
 - (3) Background Awareness
 - iii) Solitude
 - iv) Privacy
 - (1) Desired Privacy
 - (2) Perceived Privacy
 - v) Social Context
 - vi) Affect
 - b) Physical Situation
 - i) Body
 - (1) Biometrics
 - (2) Posture
 - (3) Motion
 - (4) Physical Encumbrment
 - (a) Senses
 - (i) Eyes
 - (ii) Ears
 - (iii) Tactile
 - (iv) Hands
 - (v) Nose
 - (vi) Tongue
 - (b) Workload demands/effects
 - (c) Interaction with computer devices
 - (d) Interaction with people
 - (e) Physical Health
 - ii) Environment
 - (1) Time/Space
 - (2) Objects
 - (3) Persons
 - (a) Audience/Privacy Availability
 - (i) Scope of Disclosure
 - (ii) Hardware affinity for privacy
 - (iii) Privacy Indicator for User
 - (iv) Privacy Indicator for Public
 - (v) Watching Indicator
 - (vi) Being Observed Indicator
 - (4) Ambient Interference
 - (a) Visual
 - (b) Audio
 - (c) Tactile
 - 2) Computer
 - a) Power
 - b) Configuration
 - i) User Input Systems
 - (1) Hand/Haptic
 - (a) Keyboard/Keystrokes
 - (2) Voice/Audio
 - (3) Eye Tracking
 - (4) Cursors
 - (a) Axis
 - (b) Resolution
 - (i) Selection
 - (ii) Invocation
 - (c) Accelerators
 - ii) Output Systems
 - (1) Visual
 - (a) Resolution
 - (2) Audio
 - (a) Public/Private
 - (3) Haptic
 - iii) External Resources
 - (1) I/O devices
 - (2) Connectivity
 - c) Data
 - i) Quantity/State
 - ii) Urgency/Importance
 - (1) Use of Prominence
 - iii) Modality
 - iv) Sensitivity/Purpose
 - (1) Privacy Issues
 - (2) Use of Association
 - (3) Use of Safety
 - v) Source/Ownership
 - (1) Types
 - (a) User generated
 - (b) Other computers or people
 - (c) Sensor
 - (d) PC State
 - (2) Use of Association

Fig. 17

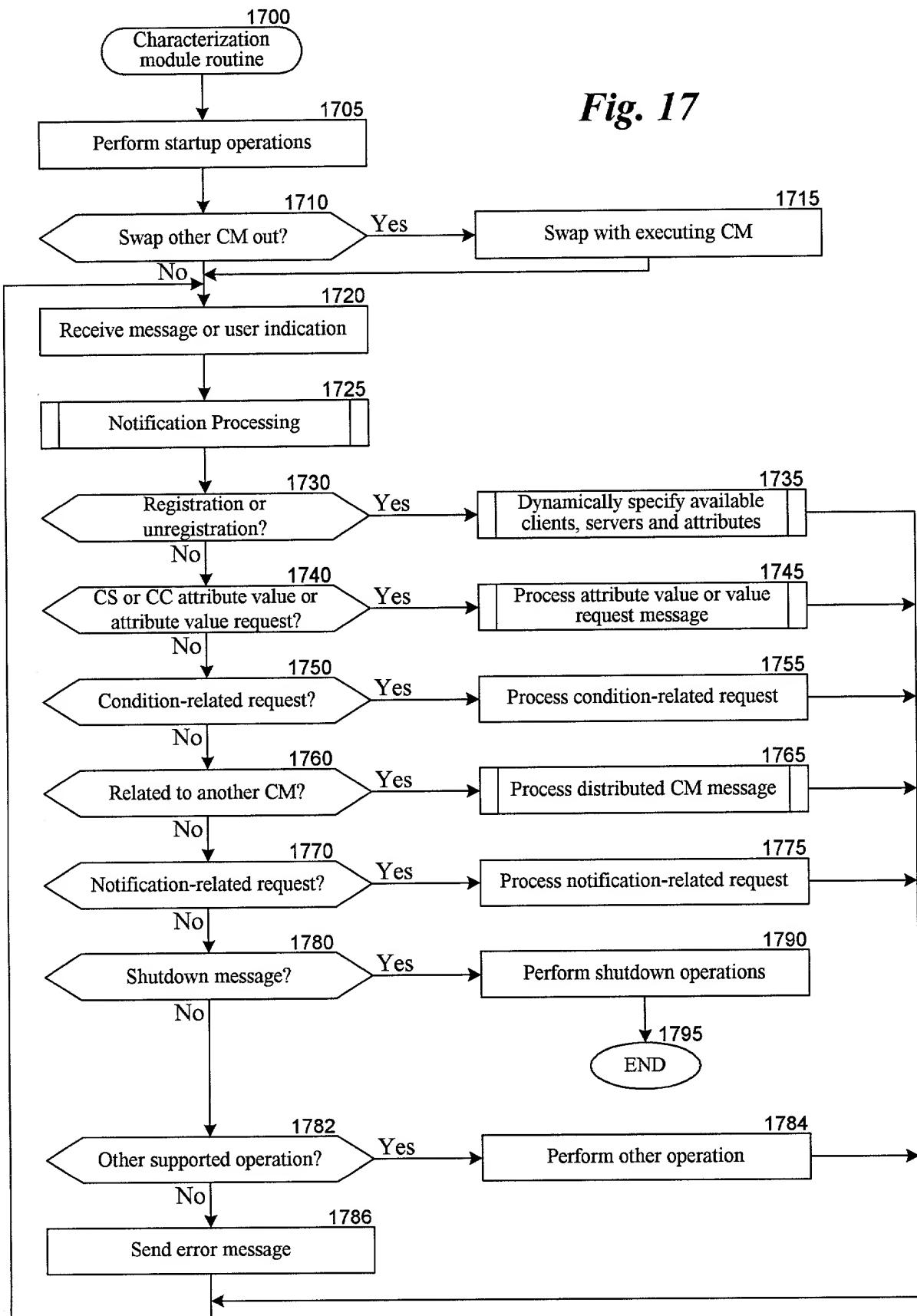
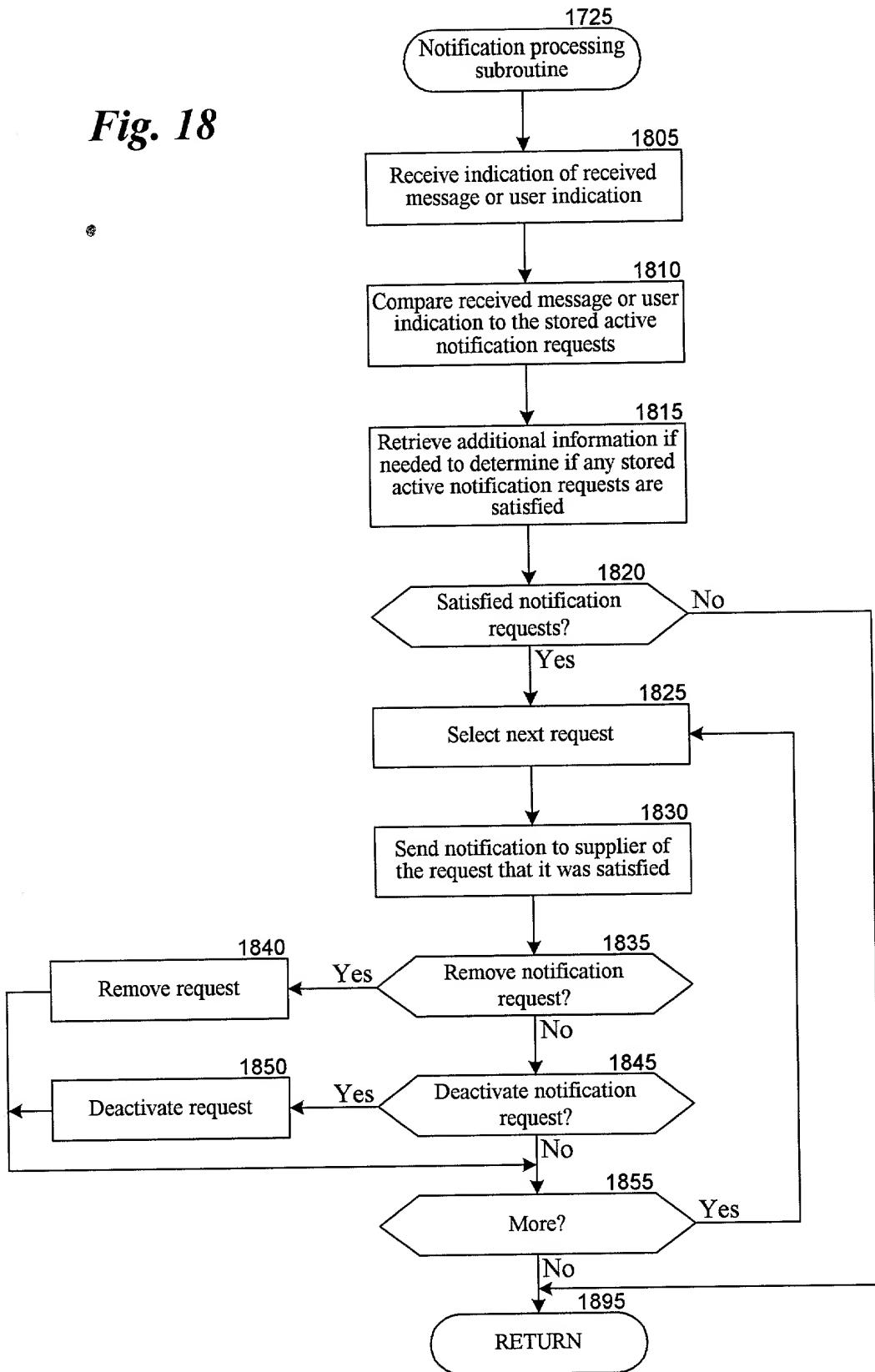


Fig. 18



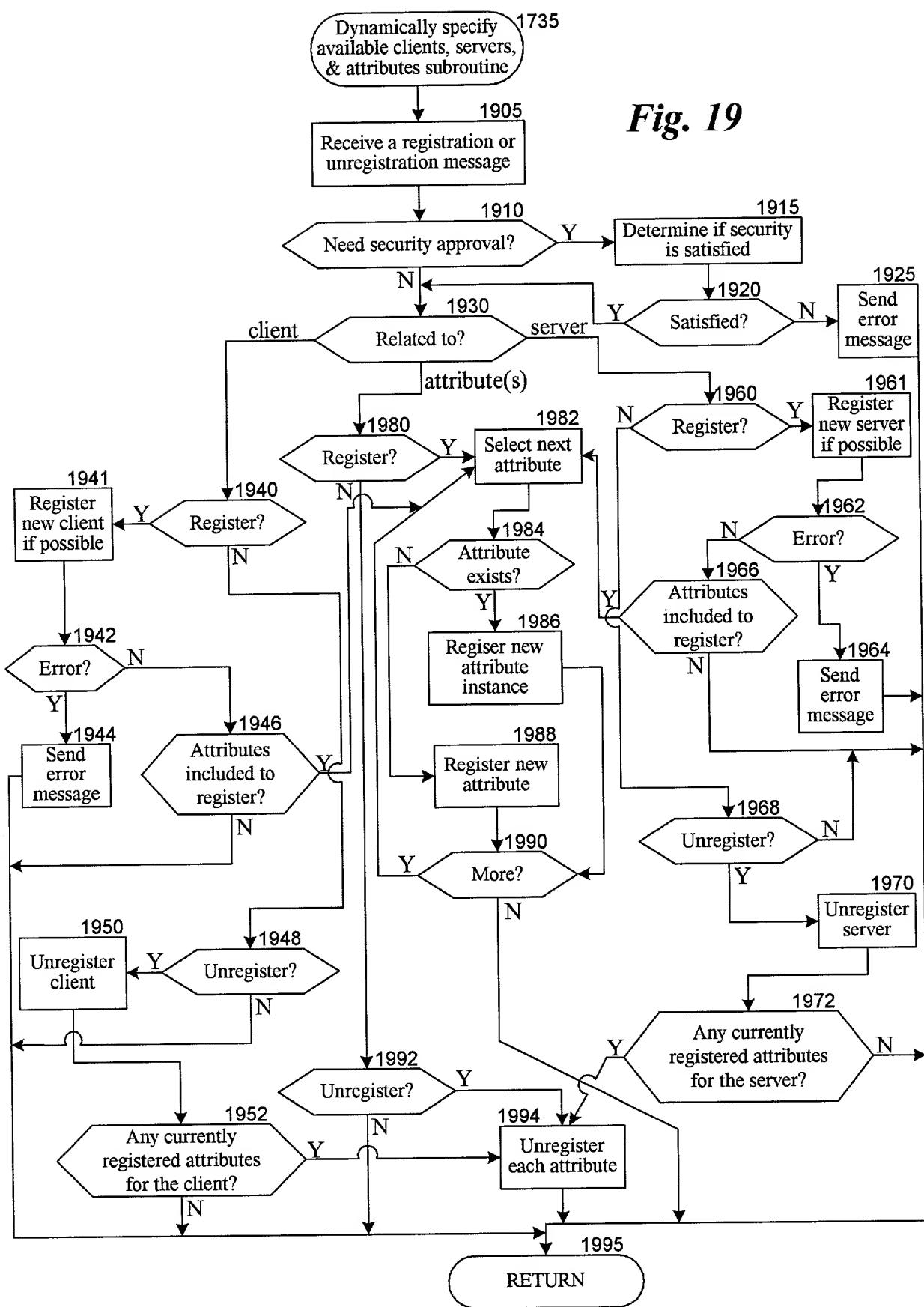


Fig. 19

Fig. 20A

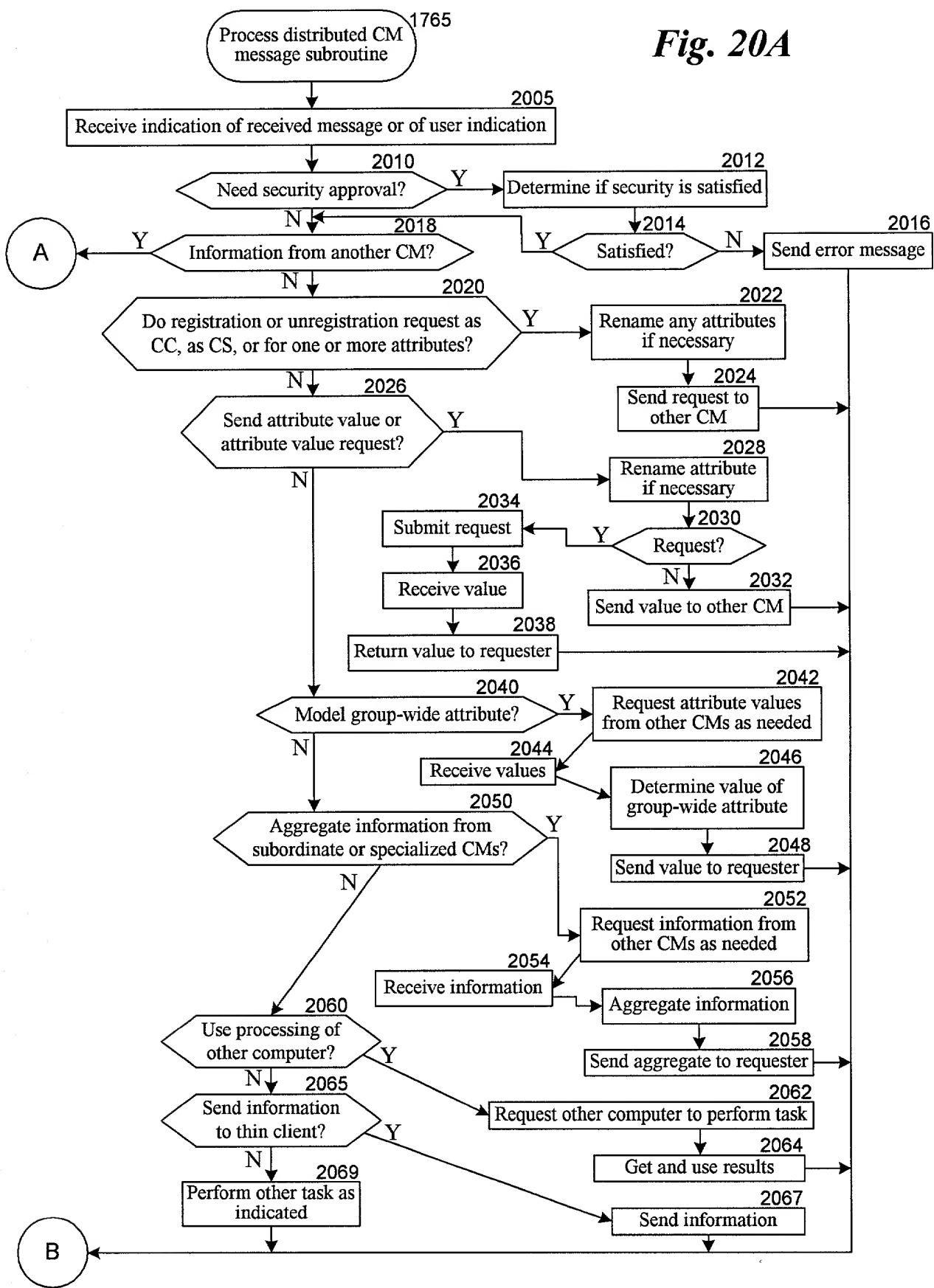


Fig. 20B

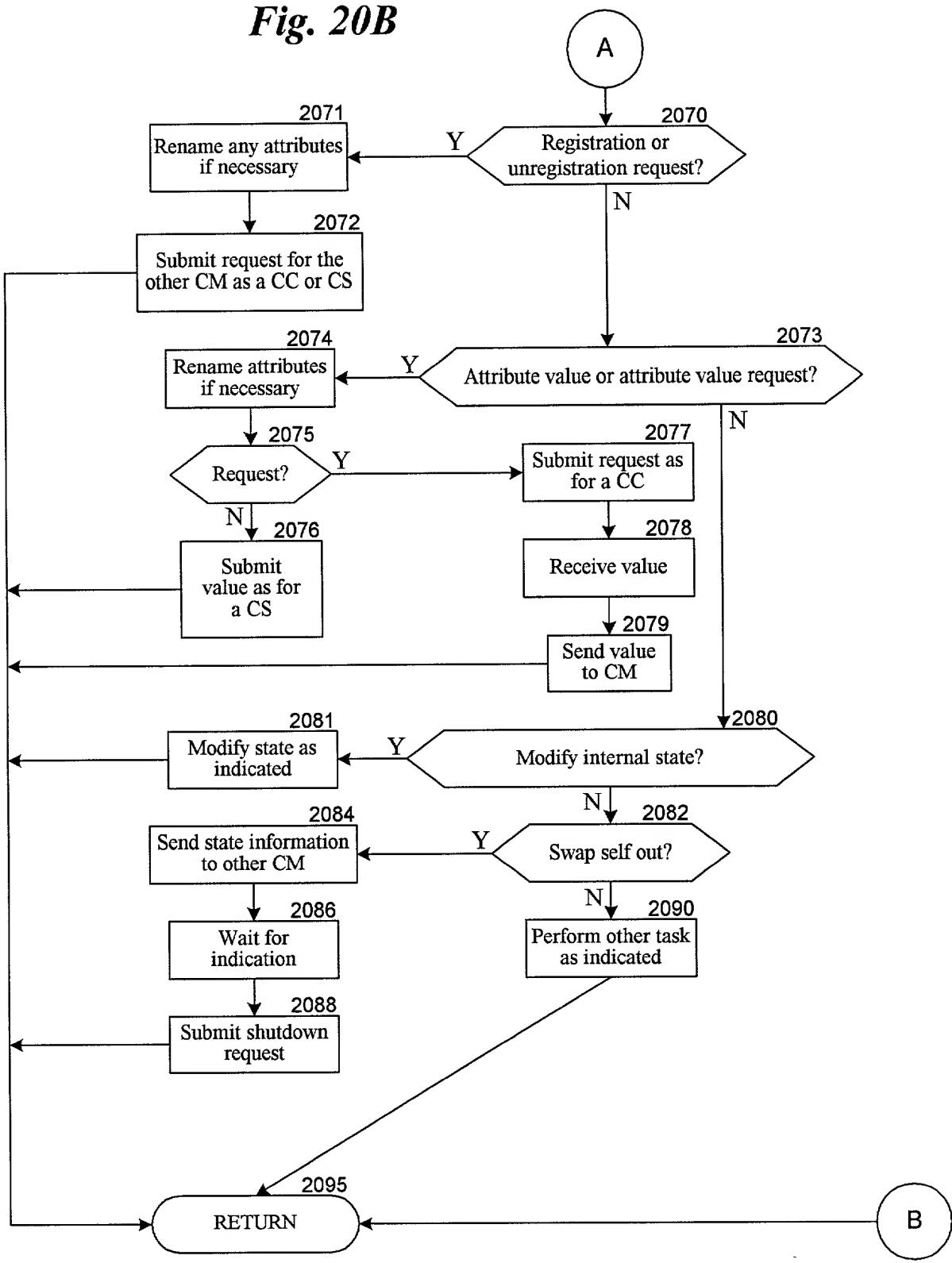


Fig. 21

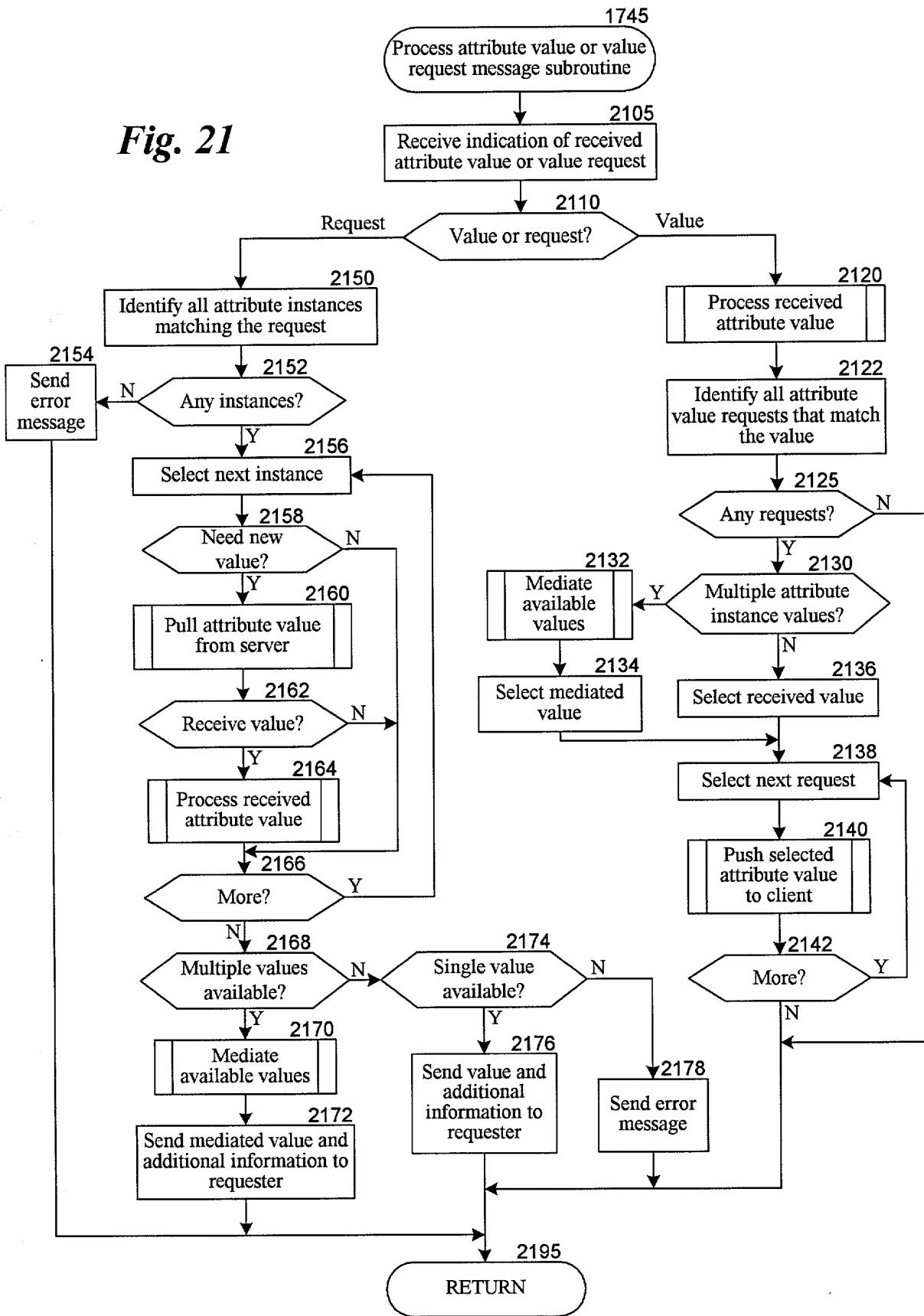


Fig. 22

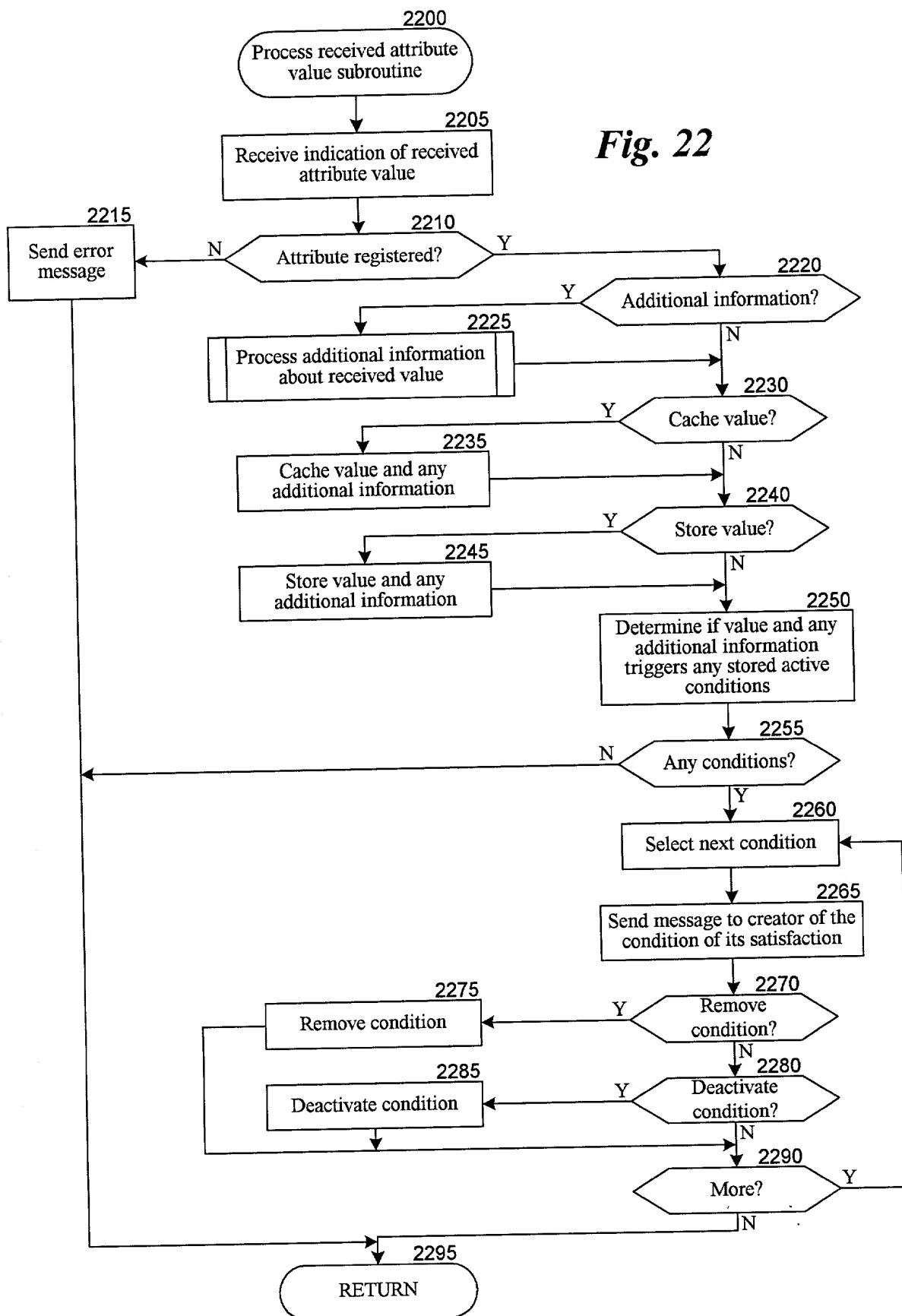


Fig. 23

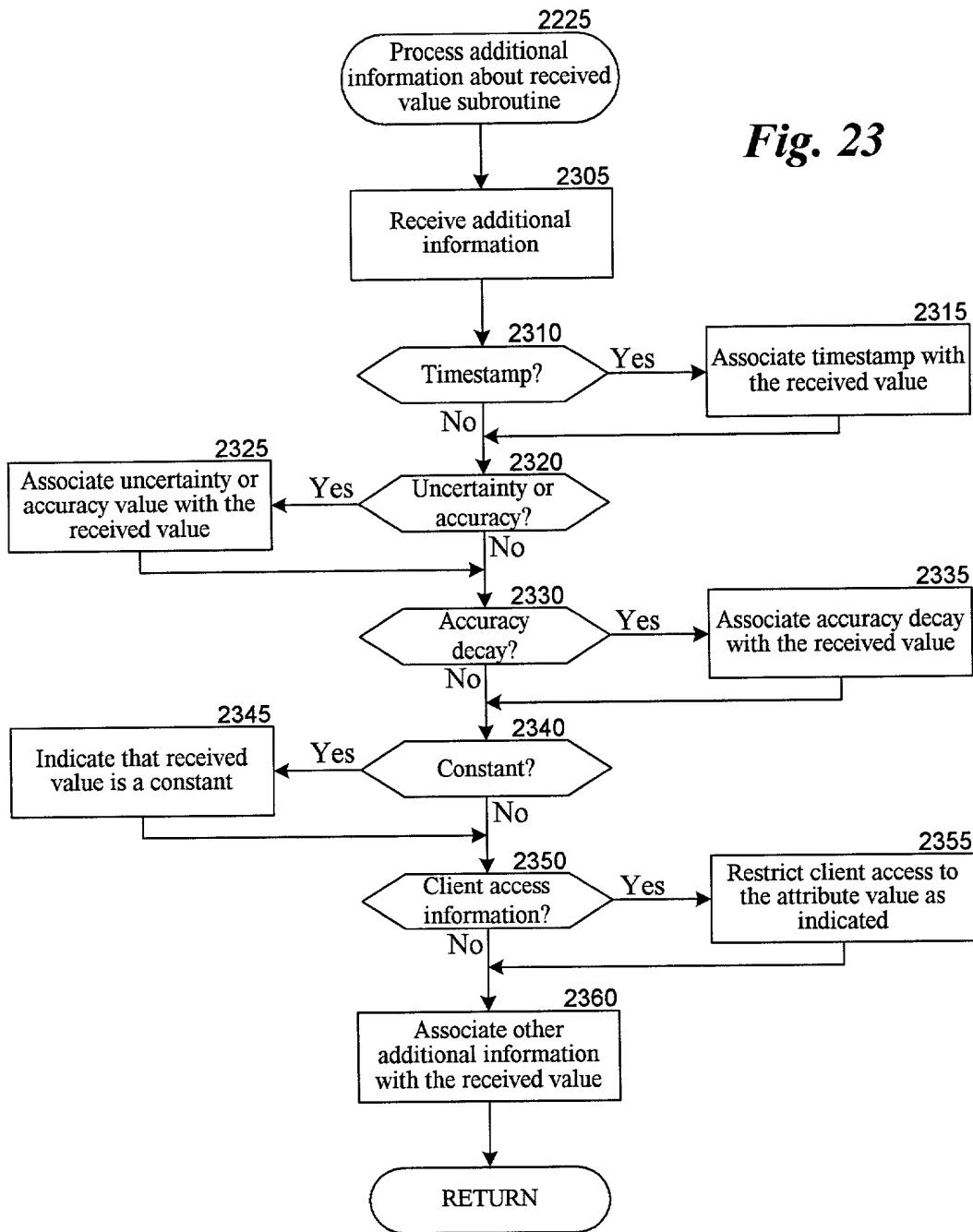


Fig. 24

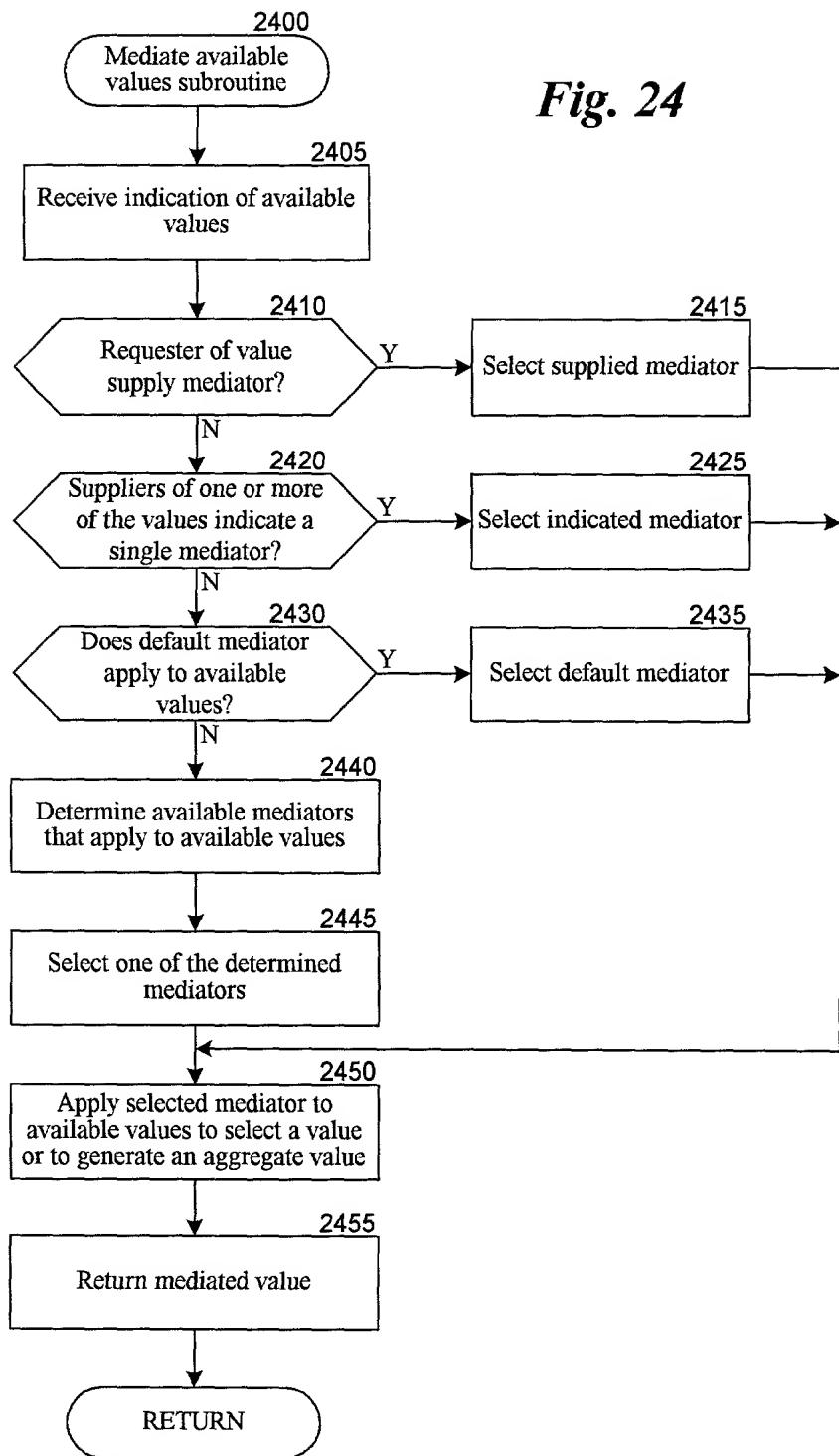


Fig. 25

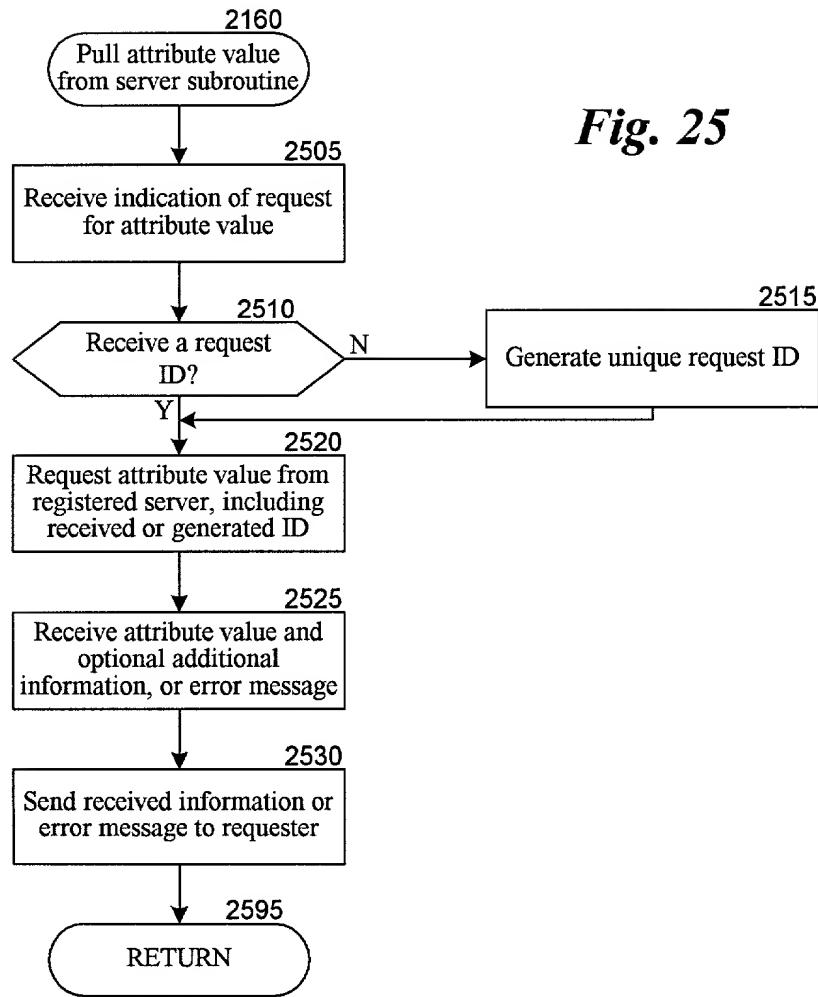


Fig. 26

